

Amendments to the Claims

The following listing of claims replaces all prior versions of the claims and all prior listings of the claims in the present application.

1-18. (canceled)

19. (new) A method of assembling tyres for vehicle wheels, comprising:
disposing a carcass structure on a primary drum;
disposing a belt structure on an auxiliary drum;
picking up the belt structure from the auxiliary drum to transfer the belt structure to a position coaxially centered with respect to the carcass structure; and
applying a tread band onto the belt structure;
wherein the carcass structure comprises at least one carcass ply in engagement with annular anchoring structures axially spaced apart from each other,
wherein the belt structure comprises at least one belt layer, and
wherein applying the tread band is carried out by winding up at least one continuous strip element of elastomer material in contiguous circumferential coils around the belt structure.

20. (new) The method of claim 19, wherein applying the tread band is carried out before picking up the belt structure from the auxiliary drum.

21. (new) The method of claim 19, wherein the at least one strip element is fed from at least one delivery member disposed close to the belt structure, simultaneously with winding up the at least one strip element around the belt structure.

22. (new) The method of claim 21, wherein feeding the at least one strip element is carried out by extrusion through the at least one delivery member.

23. (new) The method of claim 21, further comprising:
giving the auxiliary drum carrying the belt structure a circumferential-distribution rotary motion around a geometric rotation axis of the auxiliary drum, so that the at least one strip element is circumferentially distributed around the belt structure; and
carrying out controlled relative transverse-distribution displacements between the auxiliary drum and the at least one delivery member, so that the at least one strip element forms a plurality of coils disposed in mutual side-by-side relationship to define the tread band;
wherein giving the auxiliary drum the circumferential-distribution rotary motion and carrying out the controlled relative transverse-distribution displacements are carried out concurrently with winding up the at least one strip element.

24. (new) The method of claim 23, wherein the controlled relative transverse-distribution displacements are carried out by movement of the auxiliary drum.

25. (new) The method of claim 23, wherein the circumferential-distribution rotary motion and the controlled relative transverse-distribution displacements are carried out by an actuating assembly engaging the auxiliary drum.

26. (new) The method of claim 21, wherein before transferring the belt structure to a position coaxially centered with respect to the carcass structure, the auxiliary drum is moved away from the at least one delivery member to a position in which the auxiliary drum interacts with devices for disposing the belt structure.

27. (new) The method of claim 26, wherein after formation of the belt structure and before winding up the at least one strip element, the auxiliary drum is moved from the position in which the auxiliary drum interacts with devices for disposing the belt structure towards the at least one delivery member.

28. (new) The method of claim 19, wherein disposing the carcass structure on the primary drum is carried out by assembling component parts of the carcass structure on the primary drum.

29. (new) The method of claim 19, wherein the belt structure transferred to the position coaxially centered with respect to the carcass structure is coupled with the carcass structure following shaping the carcass structure into a toroidal configuration.

30. (new) An apparatus for assembling tyres for vehicle wheels, comprising:

- a primary drum;
- an auxiliary drum;
- at least one unit for applying a tread band onto a belt structure; and
- a transfer member;

wherein the primary drum is arranged to support a carcass structure,

wherein the carcass structure comprises at least one carcass ply in engagement with annular anchoring structures axially spaced apart from each other,

wherein the auxiliary drum is set to carry the belt structure,

wherein the transfer member moves the belt structure from the auxiliary drum to the primary drum,

wherein the at least one unit for applying the tread band comprises at least one delivery member, and

wherein the at least one delivery member lays down at least one continuous strip element of elastomer material in contiguous circumferential coils onto the belt structure.

31. (new) The apparatus of claim 30, wherein the at least one delivery member comprises at least one extruder.

32. (new) The apparatus of claim 30, wherein the at least one unit for applying the tread band comprises:

- an actuating assembly;

wherein the actuating assembly drives the auxiliary drum in rotation around a geometric axis of the auxiliary drum so that the at least one strip element is circumferentially distributed onto the belt structure, and

wherein the actuating assembly causes controlled relative transverse-distribution displacements between the auxiliary drum and the at least one delivery member for distributing the at least one strip element to form the circumferential coils disposed in mutual side-by-side relationship that define the tread band.

33. (new) The apparatus of claim 32, wherein the actuating assembly operates on the auxiliary drum to move the auxiliary drum relative to the at least one delivery member.

34. (new) The apparatus of claim 32, wherein the actuating assembly is integrated into a robotized arm engaging the auxiliary drum.

35. (new) The apparatus of claim 32, wherein the actuating assembly comprises:
a carriage movable along a guide structure between a first position and a second position;
wherein in the first position, the carriage supports the auxiliary drum near devices for disposing the belt structure, and

wherein in the second position, the carriage supports the auxiliary drum near the at least one delivery member.

36. (new) The apparatus of claim 32, further comprising:

devices for applying belt layers on the auxiliary drum to form the belt structure;

wherein the actuating assembly is arranged to cause translation of the auxiliary drum towards the at least one delivery member, starting from a position in which the auxiliary drum interacts with devices for disposing the belt structure.